

Application No. 09/774,284  
Amendment Dated May 23, 2005  
Reply to Office Action of 3/29/2005

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1 – 103 (cancelled)

Claim 104 (currently amended): A method of purifying gram quantities of plasmid DNA from a bacterial cell solution, the method comprising the steps of:

lysing bacterial cells containing plasmid DNA with a lysis solution to form a lysate solution;

removing contaminants from the lysate solution by precipitating the contaminants from a supernatant of the lysate solution; and

recovering plasmid DNA from the supernatant using column chromatography over a tentacle anion exchange resin.

Claims 105 - 108 (cancelled)

Claim 109 (currently amended): The method in claim 104 wherein the tentacle anion exchange resin is a trimethylaminoethyl (TMAE) TMAE tentacle resin.

Claim 110 (previously presented): The method in claim 109 wherein the use of the TMAE tentacle anion exchange resin comprises the step of eluting the plasmid DNA via a step gradient.

Claim 111 (previously presented): The method in claim 104 wherein the tentacle anion exchange resin has a particle size of 20-40 microns.

Claim 112 (previously presented): The method in claim 109 wherein the TMAE tentacle anion exchange resin comprises a methacrylate based copolymer having a tentacle linked TMAE functional group.

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Claim 113 (currently amended): The method in claim 109 wherein the plasmid DNA is eluted from the TMAE tentacle anion exchange resin with a salt solution comprising about 1.9 M ammonium sulfate and or at least 0.7M NaCl.

Claim 114 (previously presented): The method in claim 104 wherein the step of recovering plasmid DNA from the supernatant comprises the steps of:

passing the supernatant through a tentacle anion exchange resin ; wherein the plasmid DNA binds to the resin;

eluting the plasmid DNA in a first eluate from the resin;

adjusting a salt concentration of the first eluate to contain at least 2M ammonium sulfate;

passing the first eluate through a hydrophobic interaction resin, wherein supercoiled plasmid DNA binds to the hydrophobic interaction resin; and

eluting the supercoiled plasmid in a second eluate from the hydrophobic interaction resin via an eluent having less than 2M ammonium sulfate.

Claim 115 (previously presented): A method for removing contaminants from a plasmid DNA solution comprising:

- a) contacting a solution comprising plasmid DNA with a tentacle anion exchange resin, the solution having a conductivity at which the plasmid DNA is bound to the resin;
- b) washing the resin to elute the contaminants; and
- c) eluting the plasmid DNA with a step or continuous gradient of increasing conductivity.

Claim 116 (previously presented): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having about 15 to about 50 units in length.

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**Claim 117 (previously presented):** The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having an average of about 18 charged groups covalently bound to each tentacle.

**Claim 118 (previously presented):** The method of claim 115, wherein the tentacle anion exchange resin is a strong anionic changer resin.

**Claim 119 (previously presented):** The method of claim 115, wherein the tentacle anion exchange resin has TMAE functional groups.

**Claim 120 (previously presented):** The method of claim 115, wherein the plasmid DNA solution is a clarified lysate obtained after alkaline lysis of bacterial cells comprising the plasmid DNA and removal of precipitated proteins, chromosomal DNA and cell debris.

**Claim 121 (previously presented):** The method of claim 115, further comprising a step of hydrophobic interaction chromatography (HIC).